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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,141	07/09/2003	Raymond Reuven Boxman	27/216	8087

7590 01/31/2008  
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EXAMINER
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MAYEKAR, KISHOR

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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01/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/615,141

Applicant(s)

BOXMAN ET AL.

Examiner

Kishor Mayekar

Art Unit

1795

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 14 January 2008 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: \_\_\_\_\_.

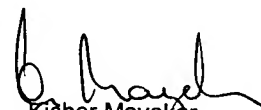
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Attached Sheets.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_  
13. ☐ Other: \_\_\_\_\_.

  
Kishor Mayekar  
Primary Examiner  
Art Unit: 1795

In response to Applicant's arguments filed 14 January 2008, the examiner has maintained the restriction and adjusted the art rejections as follows:

- Claims 76 and 78 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shroder et al. (US 6,777,639 B2), for reasons as of record; and
- Claims 77 and 79-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shroder '639.

In response to Applicant's argument to the restriction that the species are not mutually exclusive, the restriction stands because the species are mutually exclusive as the workpiece electrode arrangement as disclosed in the specification (paragraph crossing pages 22 and 23) includes carbon (such as claimed in non-elected claim 57) or a metal (read on the workpiece arrangement electrode having substantially no carbon content as claimed in the elected claim 76). Further, the results of tests in Table 1 show that when the workpiece electrode arrangement having no substantially no carbon content (such as claimed in the elected claims), nanostructures are not observed or probably present, and when the workpiece electrode arrangement comprising carbon (such as claimed in the non-elected claims), nanostructures such as claimed carbon nanotubes are observed.

To the argument that the statement by the examiner and its relevance to the pending claims is unclear to Applicant, since Schroder discloses in Fig. 3 and paragraph crossing cols. 5 and 6 that the anode electrode 31 and the cathode electrode 32 are axially aligned but spaced part within a gaseous atmosphere and the energy from the electrical discharge 36 produced between and at the center of the two electrodes melts, vaporizes and ionizes material ablated from the two electrodes to create a high temperature, high density metal plasma and the gaseous atmosphere reacts with the ablated material to form nanopowders.

To the argument that Schroder has no workpiece and the limitation "a workpiece electrode arrangement having substantially no carbon content and a surface" distinguishes the pending claims from Schroder, since the recited workpiece electrode arrangement is an arrangement of a working electrode (an anode electrode), it reads on and does not distinguish the pending claims from Schroder's anode electrode 31. And, since Schroder discloses in col. 3, lines 16-21 the anode electrode 31 formed of a precursor material, Schroder's anode electrode 31 read on the recited workpiece electrode arrangement having no carbon content and definitely a surface.

To the argument that the recited voltage supply claimed is a structure of the system and as such has patentable weight, the examiner agrees as Schroder discloses a voltage supply 51 reads on the recited voltage supply. The limitation "to form at least one nanostructure in a first region of the surface" is not a structure of the system as

asserted by the examiner in the last Office action, but a process limitation which cannot be given any patentable weight. Further, Schroder discloses that the two electrodes are spaced within the gaseous atmosphere and **nanopowders are formed from the ablated material with the gaseous atmosphere.**

To the argument that Schroder does not teach a workpiece electrode arrangement, no surface, no first region, and certainly no dimension thereof of less than 1mm as claimed in claim 77, the Examiner finds this is unpersuasive. It's because Shroder discloses an anode electrode of precursor or ablative material, the anode electrode definitely has a surface and a first region (see the anode electrode 31 in Fig. 3). As to the recited maximum dimension of the first region being less than one millimeter, since the claim depends upon claim 76 which recites the nanostructure forms **in the first region** of the surface of the anode and since Shroder discloses that the electric discharge 36 occurs at the center of and attaches to the two electrodes, the electrical discharge 36 being a function of the arc current and, by optimizing the arc current, the region of the electrical discharge is within the recited claimed range.

To the argument to the rejections of claims 79 and 80, the rejection stands since the recited duration is a process limitation, it cannot be given any patentable weight and it is **not** a structure limitation for the system. And since Schroder discloses that voltage supply 34 is configured to produce at least one electrical pulse in order to produce the electrical discharge, where the pulse is of a short duration (abstract), the pulsed power

supply may be of any of plural well known designs (col. 3, lines 36-39), or a pulse length includes  $10^{-3}$  second (Table III), Schroder's voltage supply 34 is capable of producing the recited electrical pulse.

To the argument to the rejection of claim 82, the rejection stands since Shroder discloses that the anode electrode is typically a metal of the nanopowder being produced, the selection of any of known equivalent metals of the nanopowder being produced would have been within the level of ordinary skill in the art, such as the forming of nanopowders of NIO from Jiang, a reference made of record.